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10/500,635	03/30/2005	Jerzy Kuczynski	403125/WEINSTEIN	3011

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EXAMINER

ZIMMERMAN, JOSHUA D

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2854

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10/17/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/500,635

Applicant(s)

KUCZYNSKI ET AL.

Examiner

Joshua D. Zimmerman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 12, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Admitted Prior Art (AAPA) in view of Teng (US 6541183), further in view of Arimatsu et al. (US 5317080). The cited sections of AAPA are taken from the original specification, submitted on 7/02/04.

Regarding claims 1 and 2, AAPA teaches "a method for the producing a flexographic printing plate, which has a base layer and a layer of a light sensitive material attached to the base layer (page 1, lines 4-7 and 11), comprising producing an image on the layer of the light sensitive material by selective crosslinking (page 1, lines 6-7), by insulating zones which are to be crosslinked with amplitude modulated laser light, and sweeping the layer of the light sensitive material with the laser light (page 1, lines 17-18), and, thereafter, removing zones which are not crosslinked (page 1, lines 8-9)."

AAPA fails to teach that the laser light has "a wavelength of 390 to 410 nm," or that "the layer of light sensitive material includes SBS, SIS or SEBS."

Teng teaches that violet laser diodes having a wavelength of "about 405nm" are preferred because they have lower cost (column 10, lines 43-51). AAPA also fails to

teach the use of "a bundle of diodes," as claimed in claim 2. Teng further teaches using a bundle of diodes in order to have a higher throughput (column 2, lines 35-40).

Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use a bundle of violet laser diodes in the method of AAPA in order to have a lower cost method with higher throughput, as taught by Teng.

Arimatsu et al. teach a flexographic printing plate composition using SBS or SIS (column 4, lines 25-35) in order to improve durability, ink-resistance and chemical resistance (column 4, lines 14-16). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use SBS or SIS in the binder polymer of the layer of AAPA in order to improve durability, ink-resistance and chemical resistance.

Regarding claim 12, Arimatsu et al. further teach "wherein the light sensitive material is a polymer with a hardness between 60 and 70 ShA (column 6, lines 5-6)."

Regarding claim 13, Teng further teaches "insolating the light sensitive material with an energy in a range from 20 to 1000 mJ/cm<sup>2</sup>. (column 10, lines 50-54)."

Regarding claim 15, the array of diodes taught by Teng operate "in parallel."

2. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA, Teng and Arimatsu et al., further in view of Cohen et al. (US 3264103).

Regarding claim 3, AAPA as modified fails to teach that the non-crosslinked zones are removed "by liquefying the zones which are not crosslinked thermally, without using solvents." However, Cohen et al. teach such a method (column 1, lines 67-72) in

order to avoid using toxic chemicals (column 1, lines 30-33). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use the dry process of Cohen et al. in the modified method of AAPA in order to avoid using toxic chemicals.

Regarding claim 4, Cohen et al. further teach "wherein the light sensitive material not crosslinked by the laser light has a variation in viscosity in a temperature range from 60 to 140°C., and the zones that are crosslinked melt at a temperature higher than the temperature range (column 1, line 55-72).

Regarding claim 5, Cohen et al. further teach "wherein the light sensitive material contains at least one selected from the group consisting of high molecular weight polymers, functionalized monomers or oligomers, photo-initiators, reactive or non-reactive diluents, inhibitors and protective agents, and pigments (column 2, lines 14-32)."

3. Claims 6-11 and 16-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA, Teng and Arimatsu et al., as applied to claim 1 above, further in view of Kuczynski et al. (US 2003/0054153).

Regarding claim 6, AAPA as modified teaches all that is claimed, but fails to teach that "the light sensitive material is a photo-polymer containing at least two complementary crosslinking systems." However, Kuczynski et al. teach a crosslinking system for flexographic printing plates comprising two complementary systems (paragraphs 62-64 and AAPA, page 3 lines 9-10) in order to create or destroy other

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bonds between polymer chains at different times (paragraph 62). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to implement a complementary crosslinking system in the modified method of AAPA in order to have more control over the system so that bonds could be created or destroyed at different times.

Regarding claim 7, Kuczynski et al. further teach "wherein a main system is used to create an image (paragraph 64)." In this paragraph, examiner interprets the 'main system' as the imaging system, and the 'complementary system' as the system which modifies the compressibility.

Regarding claim 8, Kuczynski et al. further teach "including using a complementary system to complete the crosslinking and to increase chemical and mechanical resistance (paragraphs 62-63 and paragraph 144)."

Regarding claim 9, Kuczynski et al. further teach "including using a complementary system to generate different compressibilities (paragraph 64)."

Regarding claim 10, Kuczynski et al. further teach "including partially crosslinking the photo-polymer to adjust viscosity and prevent cold creep during prolonged storage periods or transport (paragraph 62)." Examiner notes here that creating or destroying other bonds inherently adjusts the viscosity.

Regarding claim 11, Kuczynski et al. further teach "including sensitizing the photo-polymer with a flash of light before writing an image with the laser light (paragraph 70)."

Regarding claim 16, Kuczynski et al. further disclose “comprising tubular sleeve on a rigid support having a composite base and, attached on the base, the layer of light sensitive material which is free of solvents (paragraphs 24 and 85).”

Regarding claim 17, Kuczynski et al. further disclose “wherein the composite base has a thickness in a range from 0.2 to 40 mm (paragraph 99).”

Regarding claim 18, Kuczynski et al. further disclose “wherein the layer of the light sensitive material has a thickness in a range from 0.5 to 2 mm (paragraph 126).”

Regarding claim 19, Kuczynski et al. further disclose “wherein the sleeve includes a compressible layer (paragraph 24).”

Regarding claim 20, Kuczynski et al. further disclose “including a second sleeve containing an inserted layer for variation of thickness of the sleeve (paragraph 127).”

Regarding claim 21, Kuczynski et al. further disclose “wherein the inserted layer is compressible (paragraph 170. The compounds used here are indeed compressible).”

Regarding claim 22, Kuczynski et al. further disclose “wherein the tubular sleeve is extruded (paragraphs 91-92).”

Regarding claim 23, Kuczynski et al. further disclose “wherein the tubular sleeve is produced by rolling and attachment of a plate to a support cylinder or sleeve (paragraphs 84-86).”

Regarding claim 24, the recited method of creating the flexographic printing plate does not define over the modified structure of AAPA.

Regarding claim 25, Kuczynski et al. further disclose “wherein the rigid support includes a base made of polyester film (paragraphs 85, 86, 2, and 3).”

Regarding claim 26, Kuczynski et al. further disclose "including a plurality of the layers of light sensitive material (paragraph 170)."

Regarding claim 27, Kuczynski et al. further teach that the "flexographic printing plate is etchable with one of water, an aqueous solution under pressure, high temperature, and brushing (paragraphs 2 and 168)."

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA, Teng and Arimatsu et al., as applied to claim 1 above, further in view of Robinson et al. (US 5795647).

Regarding claim 14, AAPA as modified fails to teach that the sleeve could be produced by "thermally projecting pre-formulated powders onto a support sleeve to produce the sleeve." However, one having ordinary skill in the art would recognize that powder coating and extrusion coating methods are both recognized as equivalent methods of applying polymers. Further, column 2, lines 15-18 of Robinson et al., teach the same. Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use either method in order to easily and properly apply the polymers for the flexographic printing plate.

#### ***Response to Arguments***

5. Applicants' arguments filed 8/7/07 have been fully considered but they are not persuasive.

6. Regarding applicants' arguments that the cited sections of the applicants' specification are not prior art are not persuasive. Merely because the cited sections



have been replaced does not change the fact that applicants have clearly admitted on the record that methods and flexographic printing plates of the type in question were already known at the time of invention.

7. In response to applicants' argument that Teng is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Teng deals with an exposure device for exposing photopolymers, which is clearly relevant to applicants' endeavor.

8. Applicants' arguments regarding Cohen et al. are not understood; applicants merely "assert that Cohen does not teach removal of non-crosslinked zones by liquefying these zones without solvents ... or a process of melting at the specific temperatures" claimed. No reasons why the assertion is valid are given. Cohen et al. clearly teach a dry process (column 1, lines 37-40) comprising removing the non-crosslinked zones (column 1, lines 50-53) by heating (column 1, lines 47-49) to a temperature range between 60 and 140°C (column 1, lines 59-62 and 67-72).

9. Regarding applicants' argument that "Kuczynski fails to teach a light sensitive material layer containing at least two complementary crosslinking systems," applicants are directed to paragraph 66 which shows that the compressible layer is indeed photosensitive.

Regardless, this argument is moot since it is the crosslinking system used by Kuczynski et al. which is used to further modify AAPA, *not* the entire layer. Applicants are referred back to the rejection of claim 6, which is outlined above.\

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Zimmerman whose telephone number is 571-272-2749. The examiner can normally be reached on M-R 8:30A - 6:00P, Alternate Fridays 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua D Zimmerman  
Examiner  
Art Unit 2854

jdz

  
JUDY NGUYEN  
SUPERVISORY PATENT EXAMINER